CONSERVATION PRACTICE STANDARD

ANIMAL TRAILS AND WALKWAYS

(Feet)

CODE 575

DEFINITION

A travel lane to facilitate the movement of livestock.

PURPOSES

This practice may be applied as part of a conservation management system to accomplish one or more of the following purposes:

A. Provide or improve access for animals to forage, water, shelter, or shade.
B. Improve grazing efficiency and distribution.
C. Divert travel away from ecologically sensitive and/or erosive sites.
D. Reduce erosion of livestock walkways.

CONDITIONS WHERE PRACTICE APPLIES

A. On grazing lands where animal movement is impeded or restricted by steep rough terrain, rock outcrops, dense timber, brush, or soils with drainage limitations.

B. On rotational grazing systems where travel lanes are needed to move animals.

C. This practice does not apply to areas where livestock will be confined or held for more than 1 hour or where livestock will have access to feed, minerals, salt, shade, or water. Heavy use area Protection (PA 561) applies to these areas. This practice also does not apply to travel ways routinely or primarily used for vehicular traffic. Access Road (PA 560) is applicable to those areas.

CRITERIA

A. Trails or walkways shall be constructed wide enough to accommodate livestock movement and access by the operator but shall be a minimum six (6) feet wide and a maximum of 14 feet wide.

B. Trails or walkways shall be constructed in such a manner that accelerated erosion will not occur. A maximum of 10% slope is allowed. For distances of 100 feet or less 20% slopes will be allowed when drainage structures are provided according to Table 1 criteria.

Table 1

Maximum Distances Between Drainage Structures	
Walkway Slope (%)	Distance (feet)
1	400
2	250
5	200
10	150
15	100
20	50

C. Drainage structures such as culverts, open top culverts, and water bars shall be installed to safely dispose of surface water. Spacing of these structures are listed in Table 1. All structures should convey runoff water to stable outlets at velocities that are non-erosive. Drainage structures that convey walkway runoff shall not discharge directly to a stream.

D. Trails or walkways shall be constructed with a crown or cross slope to drain water.

The cross slope or crown shall meet the Table 2 slope requirements, measured perpendicular to the direction of travel.

Table 2

Minimum Crowns and Cross Slopes	
Trail Width	Slope
≤ 6.0 Ft	1.0 In/Ft
6.1 – 11.9 Ft	0.75 In/Ft
≥ 12 Ft	0.5 In/Ft

E. The lane or walkway shall have a minimum cross section based on soil drainage classes as contained in Table 3.

F. Construction of embankments should be kept to a minimum. The walkway cross section (Table 3) shall be installed above original grade on poorly and somewhat poorly drained soils so that drainage can occur. Side slopes shall be 1½ H to 1 V maximum. All earthfill and cut slopes need to be revegetated in accordance with Practice Standard *Critical Area Planting, (PA 342).* Where upslope runoff is intercepted, it shall be conveyed in a stabilized swale outside the trail or walkway.

G. Trails or walkways that cross natural drainage courses shall have culverts or crossings installed so they safely pass the expected runoff from a 10 year storm.

H. When walkways ford perennial or intermittent streams crossings shall be provided that meet Practice Standard *Streambank and Shoreline Protection, (PA 580)* and general permit requirements will be met where applicable.

I. The surface treatment of the walkway shall provide a suitable walking surface for livestock. Animal comfort must be the controlling factor in making the choice of final surface treatment.

J. Livestock shall be confined within the walkway surface area with fences that meet Practice Standard *Fence, (PA 382).* The trail or walkway cross section shall extend to the outside of the fence posts.

Table 3

Trail or Walkway Cross Section		
Cross Section Option	Soil Drainage Classification*	
	Well to Moderately Well Drained	Somewhat Poorly to Poorly Drained
Compacted earth**	X	
Minimum 2” surface material	X	
Minimum 2” surface material over 2” binder course over 4” base course	X	
Minimum 2” surface material over 6“ base course	X	
Minimum 2” of surface material over 6” base course over class IV geotextile (non-woven)		X
Minimum 2” of surface material over 2” binder course over 4” base course over class IV geotextile (non-woven)		X

*Based on site specific investigations due to soil complexes in local soil surveys.

** Compacted earth, including weathered shale, shall be used only on slopes less than 5% where the walkway runoff is directed across a pasture or a vegetated *Filter Strip (PA 393).*

Definitions

Surface Material: PennDOT gradations Select Granular Material (2RC) or Driving Surface Rock Aggregate (Dirt & Gravel Roads DSA Mix); AASHTO/PennDOT No. 10 (stone dust); or cementitious coal combustion by-products.

Binder Course: AASHTO/PennDot No. 57, No. 67, or 2A.

Base Course: AASHTO/PennDOT No.1, No. 3 or No. 57.

CONSIDERATIONS

A. This practice should be implemented along with other practices that facilitate proper grazing management, such as prescribed grazing and watering systems.

B. When planning the trails or walkways the time required to move livestock between areas should be considered.

C. Trail and walkway design should consider the amount of time of and frequency of livestock usage.

D. Where a trail or walkway meets a pasture, as part of a continuous grazing system and not part of a rotational system, the walkway should be widened in a V shape up to 5 times its normal width, over a length 5 times the normal width.

PLANS AND SPECIFICATIONS

Each lane or walkway shall have a site-specific design and construction plan based on the criteria contained in this standard.

OPERATION AND MAINTENANCE

A site specific O&M plan shall be prepared for and reviewed with the farm operator. The O&M plan can be part of a grazing system O&M plan. Items shall include:

A. Operation will consist of periodic grading and shaping to maintain the designed dimensions.

B. Maintenance will consist of repair that may be necessary following major storm or runoff events that would interfere with proper operation of this practice.

C. Periodic application of the final surface treatment material may be necessary to maintain a proper walking surface for the livestock.

REFERENCES

1. NRCS, Pennsylvania Technical Guide.
2. NRCS, Engineering Field Handbook
3. Using All-Weather Geotextile Lanes and Pads, Agricultural Engineering Digest AED-45, Midwest Plan Service, Ames, Iowa, 1999.
4. Constructing Mud Free Cow Lanes, Pequea-Mill Creek Information Series, College of Agricultural Sciences, Penn State University, University Park, Pennsylvania